

CLAIMS



1. A modified, conditionally replication-competent virus whose genome includes a gene switch activatable in an infected cell by exposure of the cell to heat and a small molecule regulator, the gene switch controlling the expression of a gene for a viral protein required for efficient replication of the modified virus.
2. The modified virus of claim 1, wherein the viral genome further includes a passenger gene.
- 10 3. The modified virus of claim 1, wherein the virus is a member of a family selected from the group consisting of Adenoviridae, Herpesviridae, and Retroviridae.
4. The modified virus of claim 1, wherein the virus is an adenovirus.
- 15 5. The modified virus of claim 4, wherein the gene switch controls the expression of at least one viral protein selected from the group consisting of E1A, E1B and E4.
6. A modified, conditionally replication-competent virus whose genome includes a gene switch that is activated in an infected cell by exposure of the cell to heat and
20 is repressed by exposure of the cell to a small molecule regulator, the gene switch controlling the expression of a gene for a viral protein required for efficient replication of the modified virus.
7. The modified virus of claim 6, wherein the viral genome further includes a
25 passenger gene.
8. The modified virus of claim 6, wherein the virus is a member of a family selected from the group consisting of Adenoviridae, Herpesviridae, and Retroviridae.
- 30 9. The modified virus of claim 6, wherein the virus is an adenovirus.

10. The modified virus of claim 9, wherein the gene switch controls the expression of at least one viral protein selected from the group consisting of E1A, E1B and E4.
- 5 11. A pair of modified viruses whose combined genomes contain all genetic information required for conditional replication of the virus pair; including a gene switch activatable in an infected cell by exposure of the cell to heat and a small molecule regulator, the gene switch controlling the expression of a gene for a viral protein required for efficient replication of the virus pair.
- 10 12. The modified virus pair of claim 11, wherein the genome of at least one of the viruses further includes a passenger gene.
- 15 13. The modified virus pair of claim 11, wherein the viruses are members of a family selected from the group consisting of Adenoviridae, Herpesviridae, and Retroviridae.
14. The modified virus pair of claim 11, wherein both viruses are adenoviruses.
- 20 15. The modified virus pair according to claim 14, wherein the gene switch controls the expression of at least one viral protein selected from the group consisting of E1A, E1B and E4.
- 25 16. A pair of modified viruses whose combined genomes contain all genetic information required for conditional replication of the virus pair; including a gene switch that is activated in an infected cell by exposure of the cell to heat and is repressed by exposure of the cell to a small molecule regulator, the gene switch controlling the expression of a gene for a viral protein required for efficient replication of the virus pair.
- 30 17. The modified virus pair of claim 16, wherein the genome of at least one of the viruses further includes a passenger gene.

18. The modified virus pair of claim 16, wherein the viruses are members of a family selected from the group consisting of Adenoviridae, Herpesviridae, and Retroviridae.

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19. The modified virus pair of claim 16, wherein both viruses are adenoviruses.

20. The modified virus pair according to claim 19, wherein the gene switch controls the expression of at least one viral protein selected from the group consisting of E1A, E1B and E4.

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